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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/840,886

Applicant(s)

CHARLESWORTH ET AL.

Examiner

Huyen X Vo

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-65 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 28, 56 and 65 is/are allowed.
- 6) ☒ Claim(s) 1-2, 13-27, 29-30, 41-55, and 57-64 is/are rejected.
- 7) ☒ Claim(s) 3-12 and 31-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 April 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant has submitted an amendment filed 3/31/2005, amending claims 1-58, while arguing to traverse the art rejection based on an amended limitation regarding the step of aligning two sequences of sub-word unit labels representatives of two speech recognition candidates (*see claim amendment and/or remark section*). Applicant's arguments have been considered but are moot in view of the new ground(s) of rejection necessitated by claim amendment and by introduction of new claims in view of Fakhr et al. (US 6006182).

Allowable Subject Matter

2. Claims 3-12 and 31-40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The following is a statement of reasons for the indication of allowable subject matter: see reason for allowance in claims 28 and 56.

3. Claims 28, 56, and 65 are allowed over prior art of record.

The following is an examiner's statement of reasons for allowance: Fakhr et al. disclose an apparatus for determining a sequence of sub-word unit labels representative of at least two word alternatives output by a word recognition unit label in response to a common input word to be recognized, the apparatus comprising: a receiver operable to receive a first sequence of sub-word unit labels representative of a

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first one of said at least two word alternatives output by said word recognition unit label and operable to receive a second sequence of sub-word unit labels representative of a second one of said at least two word alternatives output by said word recognition unit label (*referring to figure 1 and/or col. 2, line 24 to col. 4, line 20*); an aligner operable to align and compare sub-word unit labels of the first sequence with sub-word unit labels of the second sequence to form a number of aligned pairs of sub-word unit labels (*col. 4, lines 7-67*); and a first comparator operable to compare, for each aligned pair, the first sequence sub-word unit label in the aligned pair with each of a plurality of sub-word unit labels taken from a set of predetermined sub-word unit labels, to provide a corresponding plurality of comparison scores representative of the similarities between the first sequence sub-word unit label and the respective sub-word unit labels of the set (*col. 4, line 51 to col. 5, line 25*). Fakhri et al. fail to specifically disclose a second comparator operable to compare, for each aligned pair, the second sequence sub-word unit label in the aligned pair with each of said plurality of sub-word unit labels from the set, to provide a further corresponding plurality of comparison scores representative of the similarities between said second sequence sub-word unit label and the respective sub-word unit labels of the set; a combiner operable to combine the comparison scores obtained when comparing the first and second sequence sub-word unit labels in the aligned pair with the same sub-word unit label from the set, to generate a plurality of combined comparison scores; third comparator operable to compare, for each aligned pair, the combined comparison scores generated by said combiner for the aligned pair; and a determiner operable to determine, for each aligned pair of sub-word unit labels, a

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sub-word unit label representative of the sub-word unit labels in the aligned pair in dependence upon a comparison result output by said third comparator for the aligned. Furthermore, it would have not been obvious to one of ordinary skill in the art at the time of invention to modify Fakhr et al. in order to obtain the claimed invention. Therefore, claims 28 and 58 are allowed over prior art of record.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless – (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1-2, 15-18, 23, 25-27, 29-30, 43-46, 51, 53-55, and 57-64, are rejected under 35 U.S.C. 102(b) as being anticipated by Fakhr et al. (US 6006182).

6. Regarding claims 1, 27, 29, 55, 57-58, 61, and 63, Fakhr et al. disclose an apparatus and method for determining a sequence of sub-word unit labels representative of at least two word alternatives output by a word recognition unit label in response to a common input word to be recognized, the apparatus comprising: a receiver operable to receive a first sequence of sub-word unit labels representative of a

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first one of said at least two word alternatives output by said word recognition unit label and operable to receive a second sequence of sub-word unit labels representative of a second one of said at least two word alternatives output by said word recognition unit label (*referring to figure 1 and/or col. 2, line 24 to col. 4, line 20*); an aligner operable to align and compare sub-word unit labels of the first sequence with sub-word unit labels of the second sequence to form a number of aligned pairs of sub-word unit labels (*col. 4, lines 7-67*); and a processor operable to process the aligned pairs of sub-word unit labels formed by said aligner, to determine an output sequence of sub-word unit labels representative of the at least two at least two word alternatives (*col. 4, line 51 to col. 5, line 25*).

7. Regarding claims 25, 53, 62, and 64, Baker discloses an apparatus for determining a sequence of sub-word unit labels representative of at least two words, the apparatus comprising: a receiver operable to receive a first sequence of sub-word unit labels representative of a first one of said at least two word alternatives output by said word recognition unit label and operable to receive a second sequence of sub-word unit labels representative of a second one of said at least two word alternatives output by said word recognition unit label (*referring to figure 1 and/or col. 2, line 24 to col. 4, line 20*); an aligner operable to align and compare sub-word unit labels of the first sequence with sub-word unit labels of the second sequence to form a number of aligned pairs of sub-word unit labels (*col. 4, lines 7-67*); and a processor operable to process the aligned pairs of sub-word unit labels formed by said aligner to determine an output

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sequence of sub-word unit labels representative of the first and second sequences of sub-word unit labels by determining, for each aligned pair of sub-word unit labels, a sub-word unit label that is confusingly similar to the sub-word unit labels of the aligned pair (*col. 4, line 7 to col. 5, line 25*).

8. Regarding claims 26 and 54, discloses an apparatus for determining a sequence of sub-word unit labels representative of at least two word alternatives output by a word recognition unit label in response to a common input word to be recognized, the apparatus comprising: a receiver operable to receive a first sequence of sub-word unit labels representative of a first one of said at least two word alternatives output by said word recognition unit (*referring to figure 1 and/or col. 2, line 24 to col. 4, line 20*); a generator operable to generate, for each received word alternative, a sequence of sub-word unit labels representative of the word alternative (*referring to figure 1 and/or col. 2, line 24 to col. 4, line 20*); an aligner operable to align and compare sub-word unit labels of the first sequence with sub-word unit labels of the second sequence to form a number of aligned pairs of sub-word unit labels (*col. 4, lines 7-67*); and a processor operable to process the aligned pairs of sub-word unit labels formed by said aligner, to determine an output sequence of sub-word unit labels representative of the at least two at least two word alternatives (*col. 4, line 51 to col. 5, line 25*)

9. Regarding claims 2, 23, 30, and 51, Fakhr et al. further disclose that said processor is operable to determine said output sequence of sub-word unit labels by

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determining, for each aligned pair of sub-word unit labels, a sub-word unit label that is confusingly similar to the first and second sub-word unit labels of the aligned pair (*col. 4, lines 7-67*), and wherein said word recognition comprises a speech recognition system (*element 114 in figure 1*).

10. Regarding claims 15-18 and 43-46, Fakhr et al. further disclose that each of said sub-word unit labels represents a phoneme (*phoneme speech recognizer*); wherein said receiver is operable to receive a third sequence of sub-word unit labels representative of a third word alternative output by said word recognition unit and wherein said aligner is operable to simultaneously align and compare the sub-word unit labels of the first, second and third sequences of sub-word unit labels (*col. 4, lines 1-67*); wherein said receiver is operable to receive a third sequence of sub-word unit labels representative of a third word alternative output by said word recognition unit and wherein said aligner is operable to align and compare two sequences of sub-word unit labels at a time (*col. 4, lines 1-67*); and a word to sub-word unit label dictionary which is operable to receive the at least two word alternatives output by said word recognition unit and to generate therefrom said first and second sequences of sub-word unit labels (*the functionality of a speech recognizer*).

11. Regarding claims 59-60, Fakhr et al. further disclose an apparatus and method, wherein said processor is operable to process the aligned pairs of sub-word unit labels formed by aligner to determine an output sequence of sub-word unit labels that is

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different from the first sequence of sub-word unit labels and different from the second sequence of sub-word unit labels and which is representative of the at least two word alternatives (*col. 4, lines 1-67, the step of insertion/deletion of sub-word unit to make new words*).

Claim Rejections - 35 USC § 103

12. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

13. Claims 13-14 and 41-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fakhr et al. (US 6006182) in view of Tran (US 6070140).

14. Regarding claims 13-14 and 41-42, Fakhr et al. fail to disclose that the aligning and comparing means comprises dynamic programming means for aligning said first and second sequences of sub-word unit labels using a dynamic programming technique, and wherein the dynamic programming means is operable to determine an optimum alignment between said first and second sequences of sub-word unit labels. However, Tran teaches that the aligning and comparing means comprises dynamic programming means for aligning said first and second sequences of sub-word unit labels using a dynamic programming technique, and wherein the dynamic programming

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means is operable to determine an optimum alignment between said first and second sequences of sub-word unit labels (*col. 19, ln. 1 to col. 20, ln. 31-48*).

Since Fakhr et al. and Tran are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Fakhr et al. by incorporating the teaching of Tran in order to align speech words for better analysis to enhance speech recognition accuracy.

15. Claims 19-22 and 47-50 are rejected under 35 U.S.C. 103(a) as being unpatentable Fakhr et al. (US 6006182) in view of Oliver (US 6289140).

16. Regarding claims 19 and 47, Fakhr et al. fail to disclose a means for annotating a data file using the sub-word unit labels outputted by said determining means. However, Oliver teaches a means for annotating a data file using the sub-word unit labels outputted by said determining means (*col. 5, ln. 1-61*).

Since Fakhr et al. and Oliver are analogous art because they are from the same field of endeavor, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Fakhr et al. by incorporating the teaching of Oliver in order to provide conveniences for users to annotate document files by using input speech.

17. Regarding claims 20-22 and 48-50, Fakhr et al. fail to disclose an annotating means operable to annotate said data file using said sub-word unit labels and said words output by said word recognition unit label, the sequence of sub-word unit labels

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and said words are combined to form annotation data for the data file. However, Oliver further teaches that the annotating means is operable to annotate said data file using said sub-word unit labels and said words output by said word recognition unit label (*col. 5, ln. 44 to col. 6, ln. 51*), and the sequence of sub-word unit labels and said words are combined to form annotation data for the data file (*col. 5, ln. 44 to col. 6, ln. 51*).

Since Fakhr et al. and Oliver are analogous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Fakhr et al. by incorporating the teaching of Oliver in order to provide conveniences for users to annotate document files by using input speech.

18. Claims 24 and 52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fakhr et al. (US 6006182) in view of Applebaum et al. (US 6463413).

19. Regarding claims 24 and 52, Fakhr et al. fail to disclose a word recognition unit comprising a handwriting recognition system. However, Applebaum et al. teach a handwriting recognition system (*col. 2, ln. 22-33*).

Since Fakhr et al. and Applebaum et al. are analogous art because they are from the same field of endeavors, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Fakhr et al. by incorporating the teaching of Applebaum et al. in order to provide various modes of input to satisfy user's preference.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Sabourin et al. (US 6073099) and Franz et al (US 6178401) are considered pertinent to the claimed invention.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Huyen X Vo whose telephone number is 571-272-7631. The examiner can normally be reached on M-F, 9-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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HXV

5/27/2005


SUSAN MCFADDEN
PRIMARY EXAMINER